

Fluid Wave Assessment for Ascites

Indications:

- Patient presenting with a protuberant abdomen and with a history of liver disease or cirrhosis, hepatic or portal vein obstruction, heart failure, or nephrotic syndrome

Physiology:

- Ascites can occur with conditions causing an increase in hydrostatic pressure such as in cirrhosis, heart failure, constrictive pericarditis, or inferior vena cava/hepatic vein obstruction.
- Can also occur with conditions causing a decreased vascular osmotic pressure such as in cirrhosis, nephrotic syndrome, malnutrition, or ovarian cancer. In many cases the lower oncotic pressures within the vascular space can be caused by reduced albumin levels.

Technique:

1. The patient should be lying supine on the exam table with the abdomen exposed
2. Ask the patient or an assistant to place the ulnar surface of one hand above the umbilicus, pressing firmly (so the subcutaneous tissue and fat does not jiggle) with the hand pointing towards the patients toes
 - a. Note: This pressure helps to prevent false positives produced by the percussion passing through the abdominal wall and fat
3. Use one hand to palpate and one hand to percuss
4. Place a hand on the lateral aspect of the patient's abdomen between the costal margin and the ilium in the anterior axillary line
5. Tap one side of the patients flank sharply with your fingertips
6. Feel on the opposite flank for an impulse transmitted through the fluid
7. As a check for artifacts of unilateral insensitivities of the examiner, let the palpating hand now percuss and vice versa

Results:

- Positive: an easily palpable impulse is felt on opposite of tapping suggests ascites
- Negative: No impulse is felt

Diagnostic Accuracy:

- Sensitivity: 50%-80%
- Specificity: 82%-92%
- Predictive value: >70%

Clinical Notes:

- The fluid wave test is of limited sensitivity because it requires sufficient fluid in the peritoneal cavity to make a wave.
- A fluid wave can be detected in the erect position in some patients when it is not apparent in the supine position.

References:

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4. Guarino JR. Auscultatory percussion to detect ascites. N Engl J Med. 1986;315:1555-1556.
5. William JW, Simel DL. Does this patient have ascites? How to divine fluid in the abdomen. JAMA 1992;267:2645-2648.